

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P561048

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-82-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561048  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-12-4-LD4-1LO-40-UNV-82-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

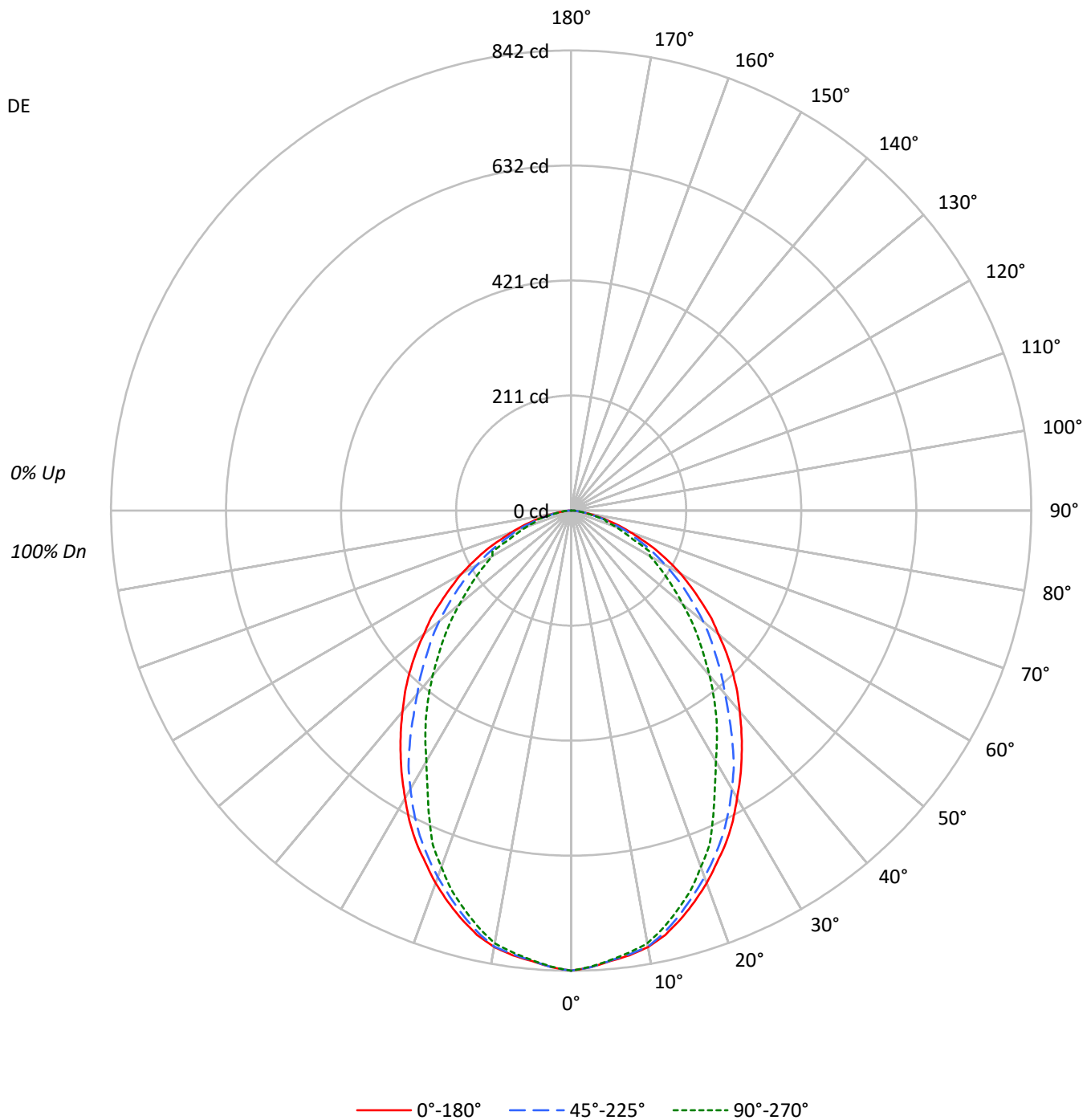
Lumens per Lamp: N/A  
Luminaire Lumens: 1653.0 lumens  
Efficiency: N/A  
Efficacy: 70.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2266	2266	2266
5°	2235	2232	2230
10°	2216	2213	2197
15°	2156	2134	2104
20°	2077	2043	1988
25°	1991	1948	1827
30°	1887	1827	1645
35°	1787	1689	1522
40°	1686	1539	1385
45°	1589	1423	1252
50°	1471	1320	1117
55°	1361	1196	1000
60°	1247	1069	896
65°	1097	936	793
70°	904	820	674
75°	718	628	658
80°	482	453	423
85°	299	361	420

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1589 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	78.4	4.7
10°-20°	215.1	13.0
20°-30°	297.8	18.0
30°-40°	317.5	19.2
40°-50°	289.7	17.5
50°-60°	226.9	13.7
60°-70°	147.9	8.9
70°-80°	65.5	4.0
80°-90°	14.1	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	591.3	35.8
0°-40°	908.8	55.0
0°-60°	1425.5	86.2
0°-90°	1653.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1653.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	842	842	842	842	842	
5°	827	826	826	826	826	79
15°	774	774	766	758	755	218
25°	671	667	656	633	615	308
35°	544	540	514	475	463	340
45°	418	409	374	343	329	322
55°	290	281	255	225	213	260
65°	172	163	147	150	125	170
75°	69	64	60	57	63	74
85°	10	11	12	13	14	13
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	842.0	842.0	842.0	842.0	842.0
2.5°	836.2	836.2	836.2	835.2	835.2
5°	827.4	826.4	826.4	825.5	825.5
7.5°	820.6	819.6	818.7	817.7	815.7
10°	810.9	810.9	809.9	805.0	804.1
12.5°	795.3	794.3	790.4	783.6	781.7
15°	773.9	773.9	766.1	758.3	755.4
17.5°	750.5	749.5	739.8	732.0	728.1
20°	725.2	723.3	713.5	700.9	694.1
22.5°	697.0	697.0	685.3	668.7	661.9
25°	670.7	666.8	656.1	632.7	615.2
27.5°	640.5	634.7	623.0	589.9	569.5
30°	607.4	604.5	588.0	545.1	529.5
32.5°	576.3	571.4	553.9	509.1	496.4
35°	544.1	540.3	514.0	475.0	463.4
37.5°	512.0	507.2	474.1	442.9	428.3
40°	479.9	474.1	438.0	409.8	394.2
42.5°	449.7	441.9	406.9	376.7	359.2
45°	417.6	408.8	373.8	342.6	329.0
47.5°	385.5	377.7	345.6	313.4	297.9
50°	351.4	344.6	315.4	283.3	266.7
52.5°	323.2	312.5	284.2	252.1	238.5
55°	290.1	281.3	255.0	224.9	213.2
57.5°	259.9	251.1	226.8	198.6	188.8
60°	231.7	219.0	198.6	174.2	166.5
62.5°	200.5	190.8	173.3	152.8	162.6
65°	172.3	162.6	147.0	149.9	124.6
67.5°	141.1	136.3	122.7	109.0	105.1
70°	114.9	109.0	104.2	89.6	85.7
72.5°	91.5	85.7	78.8	71.1	68.1
75°	69.1	64.2	60.4	57.4	63.3
77.5°	47.7	45.8	42.8	39.9	38.9
80°	31.1	30.2	29.2	28.2	27.3
82.5°	18.5	18.5	18.5	18.5	18.5
85°	9.7	10.7	11.7	12.7	13.6
87.5°	5.8	5.8	6.8	7.8	8.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)